REMARKS

This paper is being provided in response to the Office Action mailed March 9, 2006, for the above-referenced application. Applicant respectfully requests consideration of the following remarks.

Applicant has maintained withdrawn method claims 19-25 in the present application. Applicant submits that upon allowance of claims to the elected apparatus, withdrawn method claims for making or using the apparatus and including all of the features of the allowed apparatus claim may be rejoined to the application as provided under MPEP 821.04(b).

The rejection of claims 1-18 under 102(b) as being anticipated by DE 196 52 584 to Kassner, et al. (hereinafter "DE '584") or, in the alternative, under 35 U.S.C. 103(a) as being obvious thereover, is hereby traversed and reconsideration is respectfully requested.

Independent claim 1 recites a reinforcement grid for bituminous layers. The reinforcement grid includes intersecting strands made of a synthetic material, wherein the strands made of a synthetic material have a ductile yield between 3% and 8%. Claims 2-12 depend directly or indirectly from independent claim 1.

Independent claim 13 recites a reinforcement grid for a bituminous layer. The reinforcement grid includes at least two intersecting strands including a synthetic material, wherein the at least two intersecting strands have a ductile yield that corresponds to a ductile

yield of the bituminous layer. Claims 14-18 depend directly or indirectly from independent claim 13.

The DE '584 reference discloses a textile netting for reinforcing layers connected by bitumen.

The Office Action (top of page 3) recognizes that DE '584 does not explicitly teach Applicant's claimed ductile yield properties for a reinforcement grid, either as a specific percentage or that corresponds approximately to a ductile yield of a bituminous layer, among other features. The Office Action states that it is reasonable to presume that these properties are inherent to the netting of DE '584. Applicant respectfully traverses this conclusion, as detailed below.

Specifically, Applicant has discovered that a reinforcement grid having features as presently claimed concerning ductile properties has good elastic deformability and is capable of absorbing high forces applied to a bituminous layer. (See, for example, page 3, lines 15-25 of the present application.) Consequently, a reinforcement grid according to Applicant's presently claimed invention deforms to absorb shearing forces that occur during installation and due to loads and temperature fluctuations without causing damage to the bituminous layer. (See page 4, lines 7-12 of the present application.)

The Office Action states the presumption that a grid as described by DE' 584 reference has the same ductile yield range as claimed by Applicant is determined based on the use of like

materials as Applicant's claimed grid, specifically polyvinyl alcohol (PVA) (see page 3 of the Office Action). As a procedural matter, Applicant points out that the DE '584 reference does not, in fact, cite the use of polyvinyl alcohol. The use of polyvinyl alcohol is first cited in the published PCT application claiming priority to the DE '584 reference (WO 98/27282, published June 25, 1998 – corresponding English equivalents of the WO 98/27282 reference are US 6,503,853 and US 6,789,798). Applicant addresses all of these references herein.

Substantively addressing the statement that the use of a PVA lattice renders as inherent Applicant's claimed ductile yield range for a reinforcement grid, Applicant attaches hereto a document entitled Kuralon Filament by Kuraray Co., Ltd. Kuraray produces several types of Kuralon (PVA) filament yarn with different characteristics. As seen on page 3 of the Kuralon Filament document, the ductile yields (listed as "Elongation at break") for the various yarn types range from 6.7% to 13.5%.

Applicant respectfully submits that the ductile yield range of 6.7% to 13.5% for known Kuralon (PVA) filament yarn lies well beyond Applicant's claimed ductile yield range of 3% to 8%. Accordingly, Applicant submits that one of ordinary skill in the art would not inherently derive Applicant's claimed ductile yield range from the simple teaching of the use of PVA yarns. Further, Applicant submits that the Kuralon (PVA) filament yarn ductile yield range of 6.7% to 13.5% does not indicate the feature of a ductile yield for a reinforcement grid that corresponds to a ductile yield of the bituminous layer that the grid is reinforcing. Thus, Applicant respectfully submits that the DE '584 reference, the WO 98/27282 reference and the corresponding US English equivalent references do not teach or fairly suggest the above-noted features for a

reinforcement gird for bituminous layers, as claimed by Applicant. In view of the above, Applicant respectfully request that the rejections be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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Date: June 9, 2006

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KURALON FILAMENT

KURARAY CO., LTD.
1-12-39, UMEDA, KITA-KU, OSAKA, JAPAN

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1. General properties of Kuralon filament

Kuraray is producing several types of Kuralon (PVA) filament yarn with different characteristics. As shown in Table-1 and Fig.1, Kuralon filament, in general, has excellent physical properties such as high tenacity, low elongation, and high tensile modulus among various conventional synthetic and chemical fibers. Besides the above properties, Kuralon has following characteristics:

(1) Heat stability
Kuralon filament has excellent dimensional stability at high temperature among various conventional synthetic and chemical fibers in dry stage. While rayon is well-known material for its heat stability, Kuralon is more stable than rayon. (Fig.2)

(2) Chemical resistence
Kuralon has good resistance to chemicals, especially to various oils. (Table-2) Because of this property, Kuralon is used for the reinforcement of automobile hydraulic brake hose.

(3) Good adhesion to elastmers
Since Kuralon has hydroxyl group in its chemical structure, it can be easily bound to rubber compound by using conventional rayon-type RFL treatment.

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Table-1 Standard properties of Kuralon filament yarn

Yarn type		1203-2 & 1203	1225-7	1239	5501-1 & 5501	5506	5508-1	*5501
Thickness	dr. (dtex)	1200 (1330)	1000 (1110)	1200 (1330)	1800 (2000)	1200 (1330)	1000 (1110)	1500 (1670)
Number of filament		200	200	200	1000	600	600	1000
Tensile strength	kgf (daN)	9.2 (9.0)	8.0 (7.8)	11.2 (11.0)	20.0 (19.6)	13.1 (12.9)	10.8 (10.6)	16.7 (16.4)
Tenacity	g/d (N/Tex)	7.7 (0.68)	8.0 (0.71)	9.3 (0.82)	11.1 (0.98)	10.9 (0.96)	10.8 (0.95)	11.1 (0.98)
Elongation at break	%	13.5	10.0	7.7	6.7	8.0	9.0	6.7
Young's modulus	g/d (N/Tex)	150 (13.2)	180 (15.9)	200 (17.7)	230 (20.3)	200 (17.7)	190 (16.8)	230 (20.3)
Dry heat shrinkage (160°C x 30 min.)	%	0.8	0.8	0.8	0.6	0.6	0.4	0.6
Boiling shrinkage (100°C x 30 min.)	%	4.5	4.5	4.5	2.5	2.5	2.0	2.5
Specific gravity		1.30						
Melting point	°C	over 240						
Commercial moisture regain	%	5.0						

* developing item